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# FLOODLIGHTING





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# FLOODLIGHTING



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**CROUSE-HINDS COMPANY**

SYRACUSE, N.Y., U.S.A.







Illumination of Fountain





## FOREWORD

Floodlighting has so many applications and is so generally used today that it needs no introduction. Buildings, monuments, and signs of every sort become more beautiful and more conspicuous by night than by day when they are floodlighted. The Crouse-Hinds Company manufactures a very complete line of the most efficient type of floodlights. The combination of the proper reflector, lens, and lamp results in the most efficient light distribution for every installation.

Small incandescent searchlights are used for spotting distant objects and to supplement floodlights in lighting restricted areas and parts of buildings which would be difficult to light by means of the broader beam projectors.

It is impossible to cover all the applications of floodlighting in this bulletin, but a few of the more general applications are illustrated and described.

*A. H. Clarke*

Illuminating Engineer







Illumination of Capitol Dome



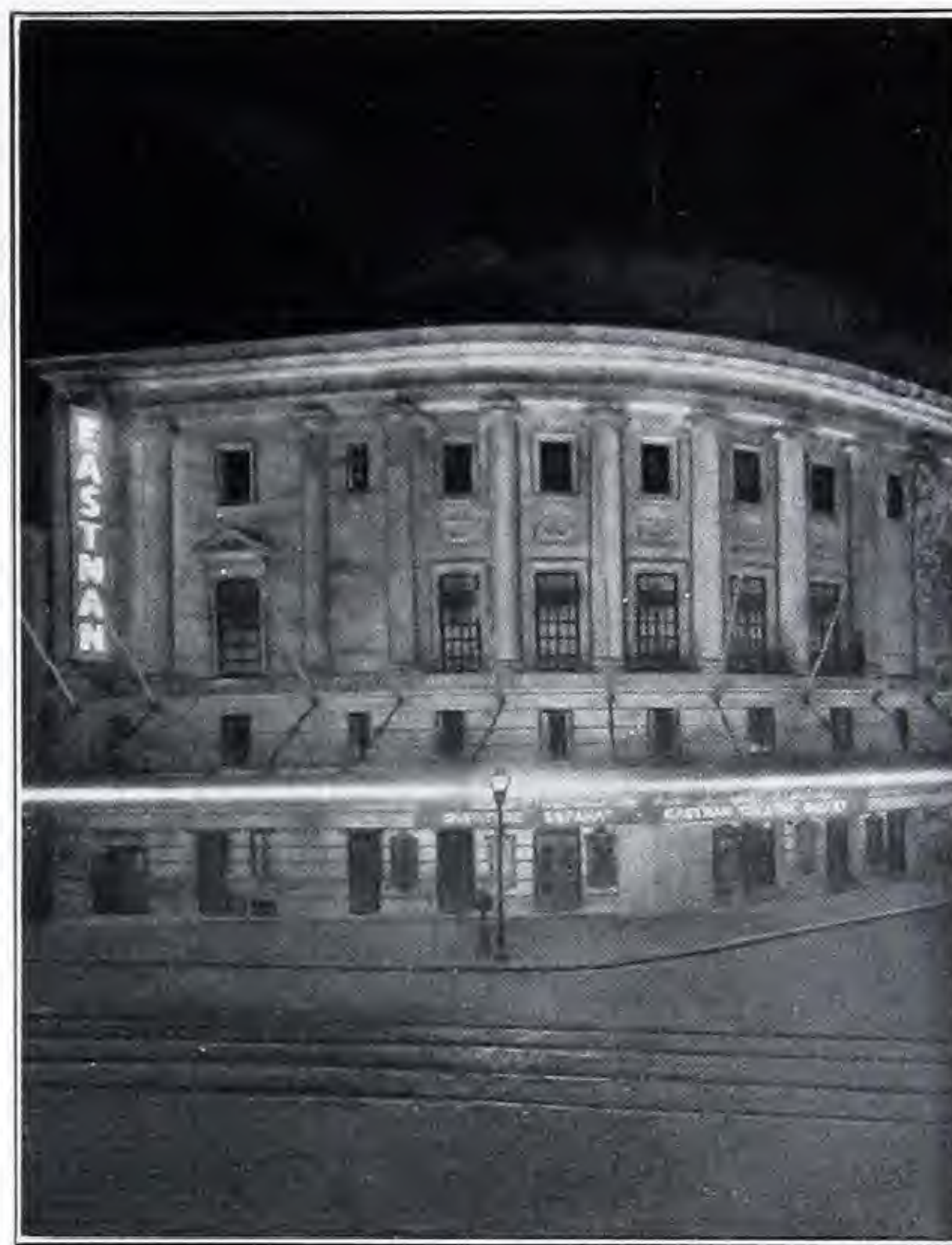


The art of floodlighting, although relatively young, has become an important element in the application of light for exterior and interior illumination. When properly installed, this method of illumination eliminates the actual light source from the field of vision while employing a source of great concentration and high intrinsic brightness.

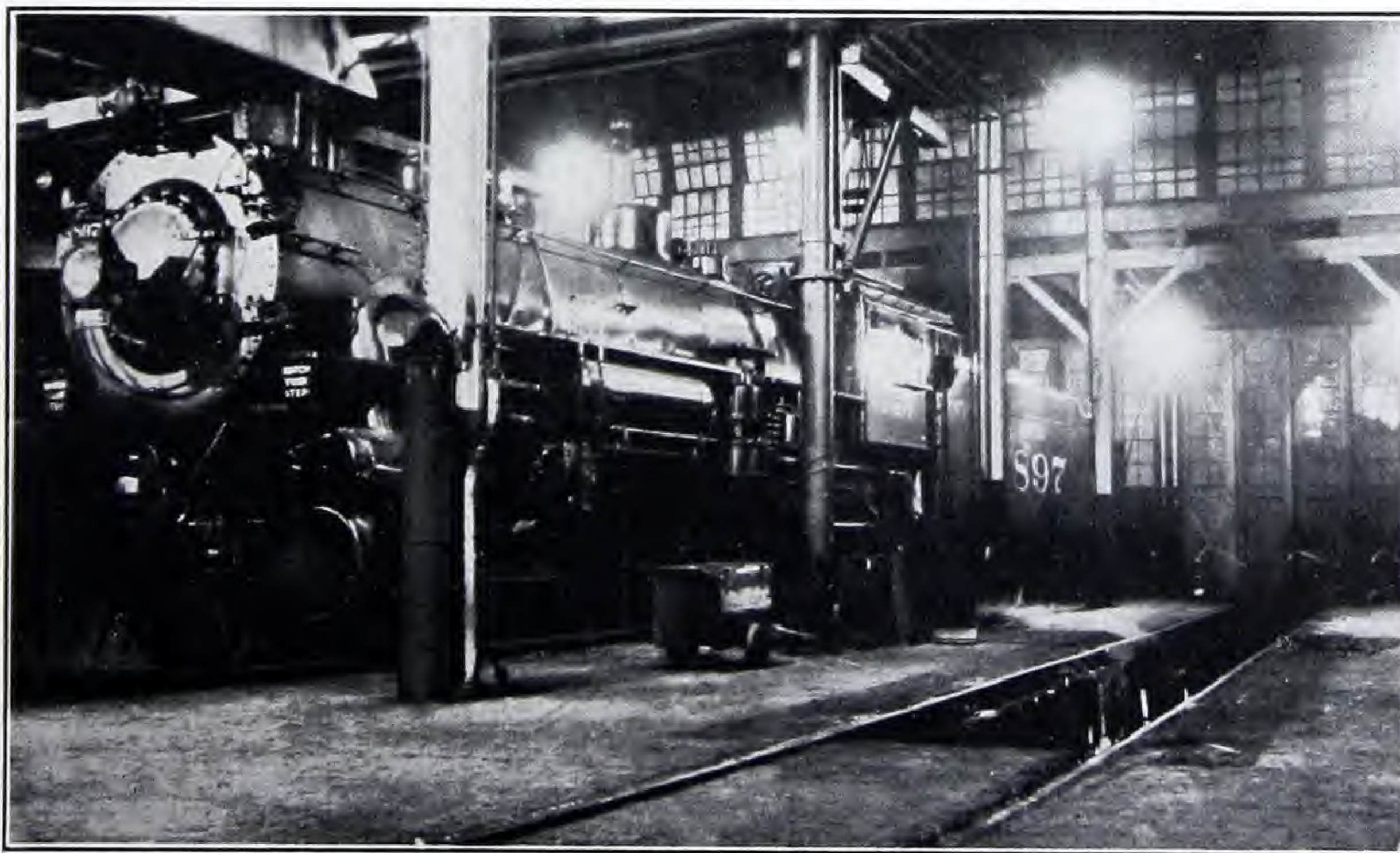
By the use of scientifically designed glassware, the light from a floodlight may be projected as a pencil-like shaft, a narrow band, or a beam of wide diffusion. By the installation in the floodlight of proper vanes, practically all of the spill light can be eliminated when it is found to be objectionable.

For certain types of electric lighting, floodlighting offers many advantages. One of the most important of these is that the lighting units do not have to be mounted at or near the area to be illuminated. An example of what this means is to be found in the case of oil refineries. Frequent fires which occur around such plants often cause interruption of the local lighting circuit with the result that all lights may be off at the time they are most needed. When floodlights are used for general illumination, they can be mounted on poles or structures removed from the fire zone and operated on independent electrical circuits. In this way, it is quite certain that the general lighting will not be disturbed by local fires.

Another distinct advantage of the use of floodlights is that the lamps used are of large size, thereby reducing the number of service outlets required and the number of sockets to be relamped. Most up-to-date floodlighting equipment is designed around a standard incandescent lamp with



Exterior Illumination of Theatre



Interior Illumination of Roundhouse





an average life rating of one thousand hours. For certain special applications, it may be advisable to use special concentrated filament lamps which have a short life. It should also be borne in mind that large incandescent lamps are more efficient than smaller units.

Due to improvements in floodlight design, it is now possible to eliminate ventilation. These new units have ample radiating surface to dissipate the heat. The old ventilated floodlights drew in dust, smoke, and gas with the air. The new non-ventilated units stay clean on the inside and retain their original efficiency.

The trend in design of floodlights is particularly toward as efficient a unit as can be produced.



Illumination of Oil Loading Racks

In other words, the beam includes the greatest possible percentage of the light generated by the lamp. So well has this been accomplished, that the best types of present day floodlights approach the maximum theoretical efficiency.

Floodlight mountings are furnished in great variety and provision is made for relamping without changing the aim of the unit. Adjacent buildings offer a support for the units for many floodlighting installations. At other times, poles must be erected for their support.

The subject of floodlighting may be divided broadly into two classifications—the artistic and the utilitarian.





Under artistic floodlighting can be classed those installations made primarily with a desire to enhance the beauty of the object illuminated and to make it more attractive by night than by day. Some of the more important applications are here given.

### Public Buildings

The advertising value of a beautifully floodlighted building is appreciated by owners of office buildings, banks, stores, theatres, etc. They realize that in the daytime their building is just one of many and that a building must be extraordinarily beautiful to attract attention. On the other



Office Building Illumination

hand, even a building of very simple lines can be made into a thing of beauty which is dignified and yet remarkably conspicuous by floodlighting its exterior with either white or colored light. The most satisfactory system of floodlighting a building is by placing floodlight projectors at a distance, on other buildings, poles, or on the ground. Floodlighting from ledges or balconies on the building itself should not be attempted unless the balconies are quite wide, and the light should not be projected to a great height. A lighted building is a reflector and is seen by the light which it reflects. This is why light projected straight up the side of a building is not effective, compared to light projected more nearly perpendicular to the building surface. The degree of illumination necessary on any such installation is dictated by the illumination of the surroundings together with the light reflecting quality of the building material itself. With the ever-increasing upward trend of street lighting intensities, building illumination intensities must be proportionately increased if the structure is to stand out in a striking manner.

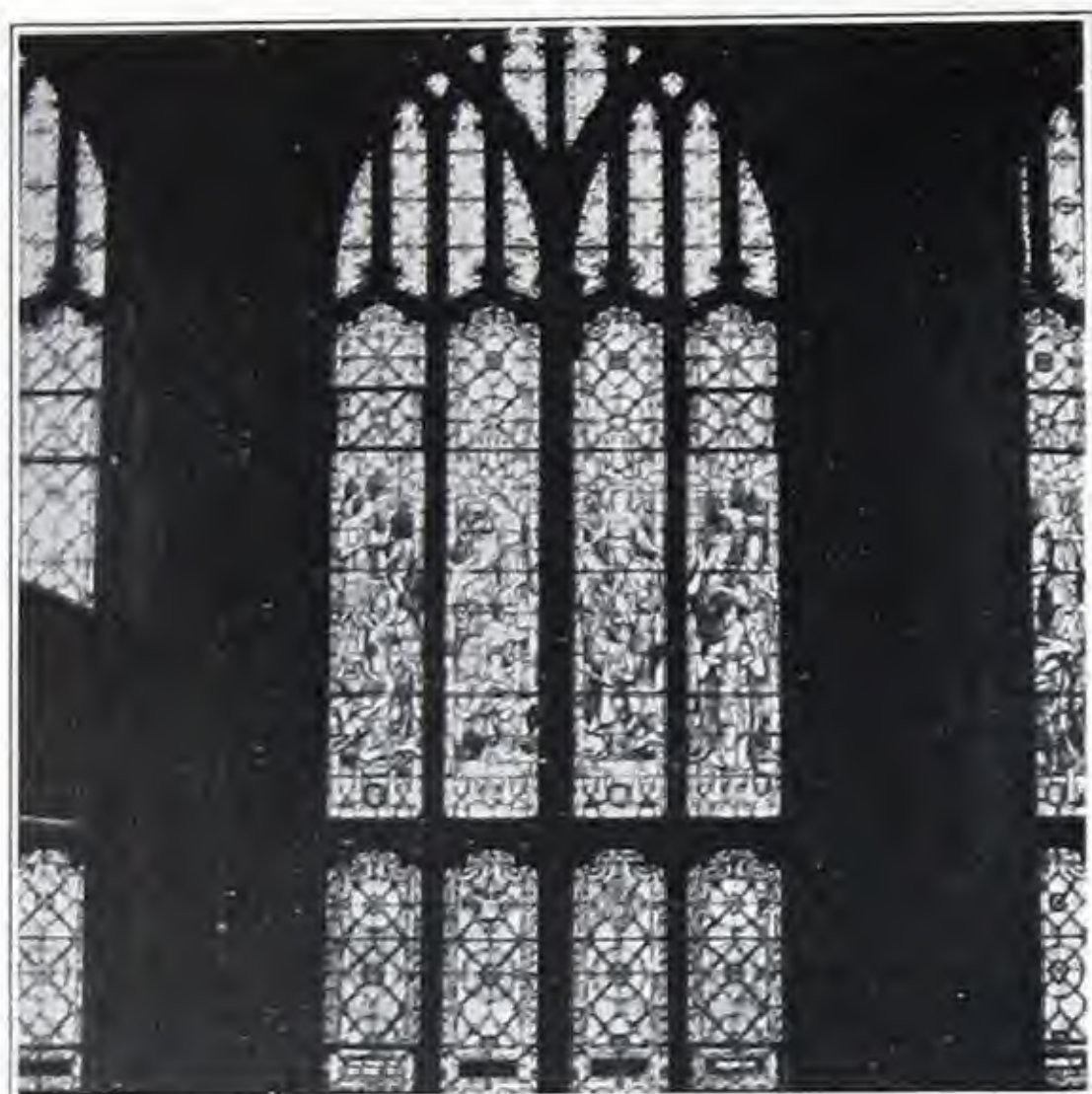


Office Building Illumination





## Churches



Church Interior Illumination

Churches offer an excellent subject for the application of floodlight engineering. The building material usually is such as to lend itself to the task, and the structure is not as a rule located in a brightly lighted district. This means that very remarkable results can be obtained with a relatively small amount of light. Floodlighting is one of the most effective means of advertising a church in the community. In these days of extensive commercial advertising, wide awake churches are finding that they have to take a lesson from commercial projects and advertise, in order to draw the attention of the public. Along with floodlighting the exterior of large churches comes the possibility of interior floodlighting. The pipe organ and rostrum should be well lighted. A visible light source, no matter how diffused, is more or less objectionable.

Properly placed floodlights solve this problem in a very efficient and pleasing manner. When it is not practicable to floodlight the exterior of the church, a very striking appearance from the outside can be obtained by illuminating with a high intensity from within, the stained glass windows.



Church Exterior Illumination





## Power Plants



Power Plant Illumination

A power company which floodlights its own buildings sets an example for its customers to follow. Many public utility companies are building very fine office buildings and attractive power plants which offer a fine medium for advertising at a very low cost when floodlighted at night. For convenience and safety in connection with switching and other similar operations, power companies install floodlights for illuminating outdoor substations, switch racks, and other structures of this kind.

## Fountains

One of the most beautiful applications of the art of floodlighting is in connection with fountains. The beauty and grandeur of the effects produced by an illuminated fountain are only limited by the number and colors of the floodlights installed, and the flexibility of control of both the water and the lights. Electric fountains now installed in many cities are sources of great civic pride and furnish pleasure to millions of people annually. A large electric fountain with its multiplicity of effects is equal in drawing power and pleasure giving possibilities to such public entertainments as band concerts and fireworks displays.



Fountain Illumination





As we advance in this electrical age, the hours of daylight are found to be too few, and adequate illumination must be provided for carrying on certain operations at night. For many reasons, floodlights offer the most practical and economical solution of the problem. The fact that the lighting equipment can be mounted at a distance, if necessary, and usually upon existing structures, is an important factor. Some of the more important utilitarian applications will be considered.

### Railroad Yards



Illumination of Railroad Yards

Until the advent of the floodlight for railroad yard lighting, the companies were forced to carry on night work with very poor lighting that was expensive to maintain and which resulted in many accidents and much property damage. At the present time, work in classification yards such as shown herewith is handled as well at night as in the daytime. Large floodlights are installed in such a way as to illuminate the ladder tracks and other important areas to a relatively high intensity. A lower level of illumination is provided for the general lighting of the yard. Installations in railroad yards have always been difficult to maintain on account of dust and smoke. Modern floodlights made entirely of glass and cast metal, preferably aluminum and without ventilating openings, give much better performance than older types which were ventilated and which soon became so filled with dust and smoke as to be practically useless for illumination purposes. These large and highly efficient modern floodlights give better lighting with a smaller number of units, less wattage, and lower installation cost. Floodlighting of freight classification yards speeds up handling of cars at night, reduces damage due to rough handling and collision, provides greater safety and improved working conditions for employees and reduces losses from pilfering. The most efficient system calls for floodlights mounted on steel towers 75 to 100 feet in height. The greater mounting height reduces glare and provides more effective lighting.

Reflecting hoods are recommended for all floodlights used in railroad yards. They intercept the stray light which would otherwise be lost and reflect it to the ground where it lights the area between the tower and the place where the main beam of the floodlight strikes the ground. This area would otherwise be dark.





## Industrial Yards



Lumber Yard Illumination

Floodlighting has been employed for years in this field for night operation and protection. These yards are in the same class as railroad yards in that the most efficient lighting installation is accomplished by the use of large sized, efficient floodlight projectors. The use of modern projectors of this sort results in lower installation and maintenance expense. Particular care should be taken in the installing of the floodlights that there may be no glare in the eyes of the workmen in the yard.

## Parking Grounds



Automobile Parking Area Illumination

Automobile parking grounds can be lighted effectively and economically by means of floodlights. The floodlights should be mounted high enough to prevent glare in the eyes of the motorists.

The parking grounds should be lighted from more than one direction, as this will eliminate shadows which would otherwise be both annoying and dangerous.





### Gasoline Service Stations

Many gasoline service stations have discarded the old method of outline lighting and are using floodlights for all of their outside illumination. The units are mounted on special poles or existing trees and at such a height that no glare is seen by the customers who drive in and out.

Floodlights have a big advantage over street lighting units for this type of lighting. The light is concentrated on the building and driveways, and is not spread all over the surrounding streets as in the case of a street lighting unit. In this way a sharp contrast between the service station and its driveways, and the surrounding streets can be obtained with the minimum expense.



Gas Station Illumination

### Private Grounds

The grounds of private estates can be floodlighted at a very reasonable cost. Light is a sure safeguard against unwelcome intruders. The same applies to the smaller grounds surrounding the average city home. A small floodlight mounted on the back of the house can be controlled from a switch on the side of the house which can easily be reached when driving the car in at night. At the touch of the switch the yard, driveway, and garage are flooded with light. When the car has been placed in the garage, the yard is still brightly lighted for the return to the house where the floodlight is turned off, inside. A third switch can be located in the master bedroom. If a noise is heard at night in the garage or around the house, a touch of the switch brings a flood of light which quickly shows an intruder. And the intruder fears light as much as he does a policeman.



Residence Yard Illumination







Prison Yard Illumination

## Prison Yards

Light aids in catching the criminal and it also helps to keep him inside the prison walls. Many prison yards are lighted with obsolete systems of bare lamps or open reflectors which sometimes, by reason of their glaring light, blind the guards instead of helping them. Yards and walls can be brightly lighted at a small cost by means of floodlights. The lighting should be of sufficient intensity to enable guards to quickly detect an escaping prisoner, even on stormy and foggy nights. The floodlights can be located at convenient points where they will not produce glare, and the wires protected by iron conduit, so that it is almost impossible for prisoners to put the lighting system in any portion of the yards out of commission.

## Airports

The latest application of the floodlight has been in connection with airports. Every town and city of any size will soon have its own airport and these airports must be lighted for night operation, if commercial flying is to become successful. Several special types of floodlights have been designed to meet the rigid requirements of the lighting of the landing area itself. In addition to the lighting of the landing area, all hangars and other buildings within the boundaries of the airport must be floodlighted. Floodlights are also used for general illumination in assisting in the loading and unloading of planes and the taking on and discharging of passengers.



Airport Illumination





## Outdoor Athletics



Illumination of Athletic Field

Participation in outdoor athletics, such as tennis, football, baseball, hockey, etc., has long been confined to those people not employed during the daylight hours. The early evening darkness prevented the worker in office, shop, and store from enjoying these health-giving sports. The public is just beginning to learn that the incandescent lamp and the floodlight projector can conquer darkness and make outdoor sports of all kinds as practical by night as by day.

Football stadiums have been floodlighted with gratifying success. Floodlights provide perfect lighting conditions for playing this strenuous game in the cool of the evening when the team can put forth its best efforts. Thousands of spectators are attracted to a night game who could not attend in the daytime. This increase in attendance and the added interest of the night playing will soon pay for the lighting installation.

## Night Construction Work

Floodlights are often a life saver for the contractor who must operate day and night to complete his contract. The light projected by powerful floodlights enables him to work as well by night as by day. Here again the possibility of locating the units at a distance from the lighted area has worked to great advantage.

The floodlights can be located at the most convenient points. Every portion of the work should, if possible, receive light from at least two directions, so that shadows are eliminated.



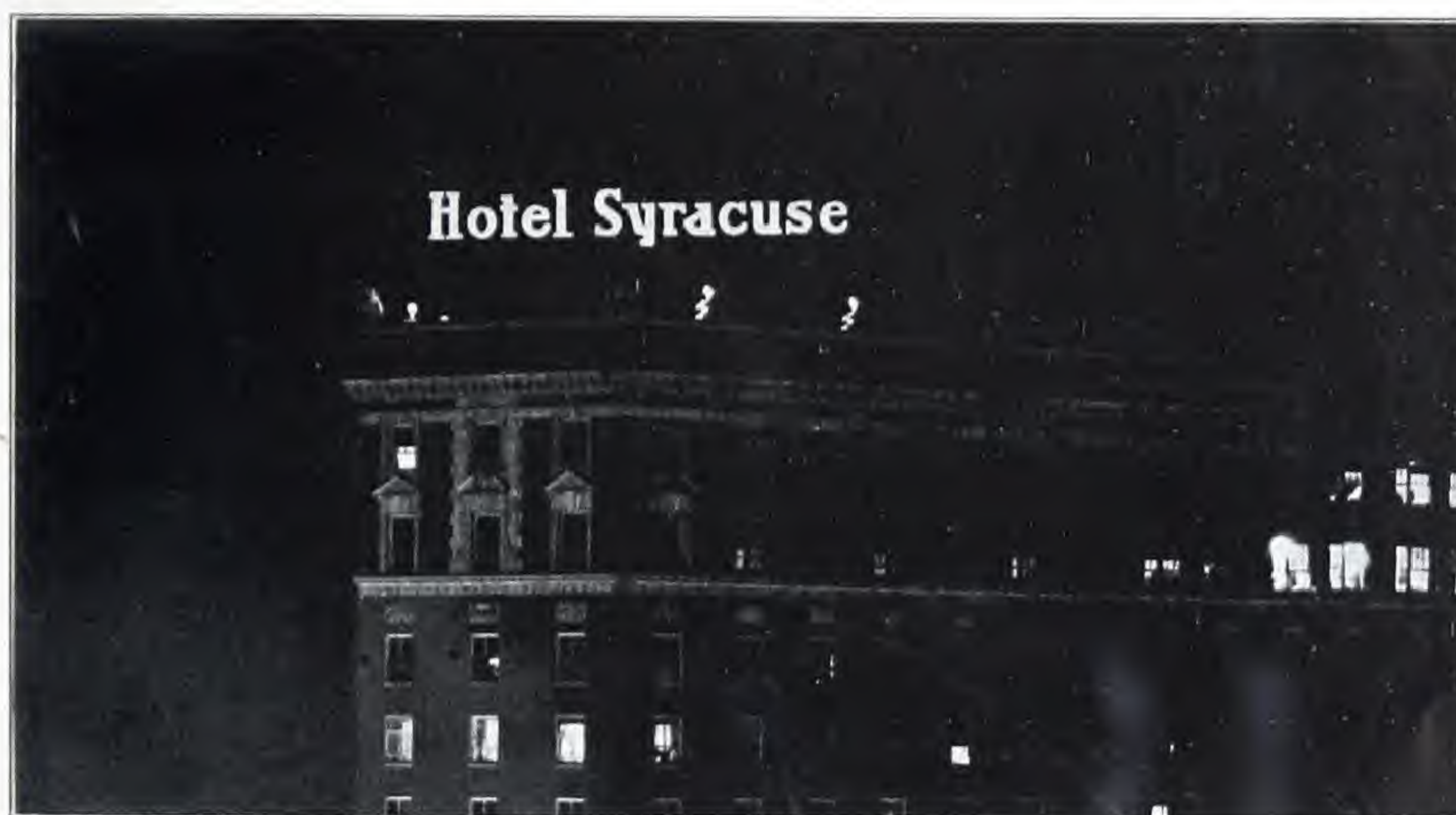
Dry Dock Illumination





## Signs

Either painted or metal outline signs can be lighted very effectively by means of floodlights. Open reflectors attached to the sign itself detract from the appearance of the sign in daytime. Often it would be impractical to run wiring and place reflectors to light a sign painted on a chimney, water tower, or some other inaccessible place. Floodlights, however, could be placed on the roofs of nearby buildings or other convenient places, and would light the sign effectively and economically. An attractive painted sign can be lighted with a few large, efficient floodlights which are located where they are easily accessible and which require very little maintenance. Compared to this a sign made up of incandescent lamps requires constant attention to replace burned out lamps, and the lamps are relatively inaccessible and difficult to get at.



Illumination of Signs





It may be that your particular conditions have not been covered in this bulletin but probably one or more of those that have been mentioned will suggest a solution to your lighting problem. Catalog, listing and describing floodlights, will be sent upon request.



Park Illumination





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